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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/732,122 | 12/07/2000 | Ellen Marie Eide | YOR920000648US1 | 9601 |

7590 12/27/2004
Kevin M. Mason, Esq.
Ryan, Mason & Lewis, LLP
1300 Post Road, Suite 205
Fairfield, CT 06430

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| EXAMINER |
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AZAD, ABUL K

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| ART UNIT | PAPER NUMBER |
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2654

DATE MAILED: 12/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/732,122

Applicant(s)

EIDE ET AL.

Examiner

ABUL K. AZAD

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to the communication filed on September 9, 2004.
2. Claims 1-24 are pending in this action.
3. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4-6, 8-10, 13-16, 22 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Ireton (US 5,797,120).

As per claim 1, Ireton teaches, "a method for synthesizing speech", comprising:

"generating a pitch contour for said synthesized speech" (Fig. 9, element 248);

and

"increasing an amount of energy in low frequency components of said pitch contour" (col. 8, lines 23-40).

As per claim 4, Ireton teaches, "where said increasing step further comprises the step of adding band limited noise to said pitch contour" (col. 8, lines 23-40).

As per claim 5, Ireton teaches, "wherein said band limited noise is comprised of one or more sinusoidal components" (col. 9, lines 32-48).

As per claim 6, Ireton teaches, "wherein said band limited noise may be expressed as a $\sin(\omega t + \Phi)$ " (this is a typical expression for sinusoids wave form, therefor here it is inherent).

As per claim 8, Ireton teaches, "wherein said increasing step serves to add vibrato to said pitch contour" (col. 8, lines 23-40).

As per claim 9, Ireton teaches, "wherein said pitch contour comprises a pitch value associated with each syllable of said speech" (col. 7, lines 13-26).

As per claims 10, 13-16 and 22-23, they are interpreted and thus rejected for the same reasons set forth in the rejection of claims 1, 4-9.

6. Claims 17, 18, 20 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Tohkura et al. (Spectral Smoothing Technique in PARCOR Speech Analysis-Synthesis).

As per claim 17, Thokura teaches, "a method for synthesizing speech", comprising:

"generating a pitch contour for said synthesized speech" (section Parameter estimation error influences on synthetic speech quality); and

"filtering said pitch contour with an impulse response filter having a pole at a desired low frequency value" (section Bandwidth expansion method).

As per claim 18, Thokura teaches, "wherein low frequency value is below approximately 10 Hz" (section Bandwidth expansion method, bandwidths are expanded by 30-10 Hz)

As per claim 20, Thokura teaches, "wherein said increasing step serves to add vibrato to said pitch contour" (section Bandwidth expansion method).

As per claim 21, Thakura teaches, "wherein said pitch contour comprises a pitch value associated with each syllable of said speech" (section Parameter estimation error influences on synthetic speech quality).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ireton (US 5,797,120) as applied to claims 1 and 10 above.

As per claims 2 and 11, Ireton does not explicitly teach, "wherein said low frequency components are below approximately 10 Hz". However, Ireton teaches at col. 8, lines 35-40, "the band-variable noise generator can be selectively generate a noise signal having various desired frequency spectra or frequency characteristic. The band-variable noise generator of the present invention can selectively add noise to various parts of the signal spectra, thus providing a distinct naturalness to the speech signal".

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Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to the low frequency component is about 10Hz, the choice of the low frequency component is routine experimentation and optimization in the absence of criticality.

9. Claims 3, 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ireton and Tohkura as applied to claims 1, 10 and 17 above, and further in view of Pearson (US 5,400,434).

As per claim 3, 12 and 19, Ireton and Tohkura do not explicitly teach, "interpolating discrete pitch values to generate said pitch contour". However, Pearson teaches, "interpolating discrete pitch values to generate said pitch contour" (col. 6, lines 55-68, particularly read on "to produce varying pitch, interpolation is performed within the table"). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to interpolate discrete pitch values to generate pitch contour because Pearson teaches his invention produce a naturalness speech at the output (col. 7, lines 7-48).

10. Claims 7 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ireton (US 5,797,120) as applied to claims 122 above, and further in view of Tohkura et al..

As per claims 7 and 24, Ireton does not explicitly teach, "wherein said increasing step further comprises the step of filtering said pitch contour with an impulse response

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filter having a pole at a desired low frequency value". However, Tohkura teaches, "wherein said increasing step further comprises the step of filtering said pitch contour with an impulse response filter having a pole at a desired low frequency value" (Section: Bandwidth expansion method). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an impulse response filter having a pole so as to produce natural speech output.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Abul K. Azad** whose telephone number is **(703) 305-3838**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richemond Dorvil**, can be reached at **(703) 305-9645**.

Any response to this action should be mailed to:

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Or faxed to:

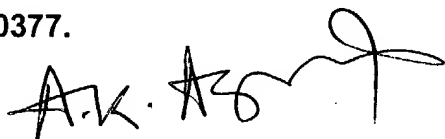
(703) 872-9314

(For informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center's Customer Service Office at telephone number (703) 306-0377.

A handwritten signature in black ink, appearing to read 'A.K. Azad' followed by a stylized flourish.

Abul K. Azad

December 15, 2004